

## CLAIMS

1. An in-car electronic device with an anti-theft feature, comprising:  
a fixed front surface that is provided on a front surface of a casing incorporating an electronic circuit and mainly formed of a flat surface;  
a movable member which can be installed in a regular position to cover a front of the fixed front surface, and a surface of which is provided with a control surface having a display member and/or a control member; and  
position changing means for moving the movable member between the regular position and a retracted position where the movable member is circularly moved by substantially 90 degrees from the regular position so as to be retracted in an opening,  
wherein an end surface of the movable member in the retracted position is substantially flush with the fixed front surface.

2. An in-car electronic device with an anti-theft feature according to Claim 1, wherein an end portion of the movable member is provided with a protuberant portion that extends toward a front surface providing a control surface or toward a rear surface, and when the movable member moves toward the retracted position, the opening is closed by the end portion of the movable member after the display member and/or the control member passes by the opening.

3. An in-car electronic device with an anti-theft feature according to Claim 1, wherein the position changing means is driven by power of a motor driver, and the movable member can be automatically moved between the regular position and the retracted position by the power of the motor driver.

4. An in-car electronic device with an anti-theft feature according to Claim 3, wherein the motor driver is controlled so that the movable member is stopped in a state wherein the control surface is aslant in the middle of a travel of the movable member from the regular position to the retracted position.

5. An in-car electronic device with an anti-theft feature according to Claim 3, wherein,

when one direction along an arbitrary lateral edge of the fixed front surface is defined as a first side, and the other direction is defined as a second side, the opening is provided at a position closer to the first side in the fixed front surface; and

the movable member is controlled in its position by the position changing means so that an end portion thereof on the first side advances forward from the regular position and an end portion thereof on the second side circularly moves toward the first side, then the end portion on the second side is oriented toward the casing and entered into the opening to reach the retracted position.

6. An in-car electronic device with an anti-theft feature according to Claim 3, wherein the fixed front surface is provided with a secret control member for projecting the retracted movable member from the opening.

7. An in-car electronic device with an anti-theft feature according to Claim 1, wherein a password signal for authorizing display operation and/or control of the movable member is enabled to be entered using a control member provided on the control surface of the movable member, when the movable member is projected to an accessible position from the retracted position.

8. An in-car electronic device comprising:  
a fixed front surface that is provided on a front surface of a casing having an electronic circuit therein and mainly formed of a flat surface;  
a movable member which can be installed in a regular position to cover a front of the fixed front surface and a surface of which is provided with a control surface having a display member and/or a control member;  
position changing means for moving the movable member between the regular position and a retracted position where the movable

member is circularly moved by substantially 90 degrees from the regular position so as to be retracted in an opening; and

a cover that covers the opening in the retracted position.

9. An electronic device comprising:

a casing;

a movable member provided with a display member and/or a control member; and

position control means for moving the movable member between a retracted position where the movable member is retracted in the casing and a regular position where the movable member is oriented perpendicularly to the retracted position after the movable member is drawn out of the casing,

wherein the position control means comprises:

a first support point and a second support point at which the movable member is supported laterally;

a reciprocating member that is coupled to the first support point and moves forward and backward along the casing;

a position changing member having one end thereof coupled to the second support point and the other end thereof provided with a control support point engaging the reciprocating member;

a switching member having a retracted position guiding portion that guides the control support point toward a rear of the casing to move the movable member to the retracted position when the reciprocating member recedes from an advanced position, a regular position guiding portion that restricts a backward movement of the control support point to allow the movable member to move to the regular position when the reciprocating member recedes from the advanced position, and a shifting portion having a switching portion that switches between the retracted position guiding portion and the regular position guiding portion; and

a selecting member for selecting whether the control support point should be led to the retracted position guiding portion or the regular

position guiding portion when the reciprocating member recedes from the advanced position.

5 10. An electronic device according to Claim 9, wherein the selecting member is set at a restricting position where it blocks the retracted position guiding portion to restrain the control support point from moving back into the retracted position guiding portion when the control support point moves from the retracted position to a front end of the retracted position guiding portion, and at a restriction release position where the selecting member clears the foregoing restriction so as to allow the control support point to enter the retracted position guiding portion when the reciprocating member travels backward from the regular position.

10 15 11. An electronic device according Claim 10, wherein the selecting member is urged toward the restricting position by an urging member, and when the movable member shifts to the regular position, a moving force of the control support point toward the regular position guiding portion causes the selecting member to be slightly locked in the restriction release position, or when the movable member shifts to the retracted position, the moving force of the control support point traveling away from the retracted position guiding portion releases the slight lock.

20 25 12. An electronic device according to Claim 10, wherein the reciprocating member comprises a guiding section where the control support point moves, and the guiding section is equipped with a linear guiding portion extending longitudinally, a slant guiding portion that leads the control support point to the retracted position guiding portion when the reciprocating member advances, and another slant guiding portion that leads the control support point to the regular position guiding portion when the reciprocating member recedes.

13. An electronic device according to Claim 10, wherein the reciprocating member is moved forward and backward by the power of the

motor driver so as to automatically move the movable member between the regular position and the retracted position.

14. An electronic device according to Claim 9, wherein  
when one direction along an arbitrary lateral edge of a front  
panel provided on the front surface of the casing is defined as a first side, and  
the other direction is defined as a second side, the opening is provided at a  
position closer to the first side in the front panel;

the first support point is provided at the first side of the movable  
member, while the second support point is provided at a position closer to the  
second side away from the first support point;

the regular position guiding portion of the switching member is  
provided at a position closer to the second side away from the retracted  
position guiding portion; and

an end portion of the movable member on the first side  
advances and an end portion thereof on the second side circularly moves to  
approach the first side when the reciprocating member advances from the  
regular position, then the end portion on the second side enters the opening  
first and reaches the retracted position when the reciprocating member  
recedes.

15. An electronic device according to Claim 14, wherein the regular  
position guiding portion extends toward the rear beyond the dividing portion  
and in parallel to the retracted position guiding portion, and is shorter than the  
retracted position guiding portion, and as the reciprocating member advances  
when the movable member is in the regular position, the control support point  
advances in the regular position guiding portion, and at this time, the movable  
member moves forward in parallel, then when the reciprocating member  
recedes, the control support point shifts via the dividing portion to the  
retracted position guiding portion, thus setting the movable member  
substantially perpendicular to the front surface of the front panel to place the  
movable member in the casing.

16. An electronic device comprising:

a casing;

a movable member equipped with a display member and/or a control member; and

position control means for moving the movable member between a retracted position where the movable member is accommodated in the casing and a regular position where the movable member is oriented perpendicularly to the retracted position or inclined at a predetermined angle after the movable member projects out of the casing,

wherein the position control means comprises:

a motor driver;

a first support point and a second support point at which the movable member is supported laterally;

a reciprocating member that is coupled to the first support point and moves forward and backward along the casing;

a motion converting means for causing the reciprocating member to move forward and backward once by a rotational power of the motor driver in a first direction, and also causing the reciprocating member to move forward and backward once by the rotational power of the motor driver in a second direction; and

switching means for switching a moving path of the second support point so that the movable member in the regular position is circularly moved to the retracted position when the reciprocating member is moved forward and backward once by the revolution of the motor driver in the first direction, and that the movable member in the retracted position is projected out of the casing and further circularly moved into the regular position when the reciprocating member is moved forward and backward once by the revolution of the motor driver in the second direction.

17. An electronic device according to Claim 16, wherein the motion converting means comprises a rotating member rotatably driven in one direction by a rotational power in the first direction of the motor driver and in

the other direction by the rotational power in the second direction, and a sliding member that slides a drive cam portion provided on either the reciprocating member or the rotating member against the driving cam portion provided on the other to thereby reciprocate the reciprocating member.

5           18.    An electronic device according to Claim 16, wherein the switching means comprises:

                a control support point provided on a position changing member rotatably coupled to the second support point;

10               a switching member having a retracted position guiding portion that guides the control support point toward a rear of the casing to move the movable member to the retracted position when the reciprocating member moves backward from an advanced position, a regular position guiding portion that restricts a backward movement of the control support point to allow the movable member to move to the regular position when the reciprocating member moves backward from the advanced position, a switching portion that switches between the retracted position guiding portion and the regular position guiding portion; and

15               a selecting member for selecting whether the control support point should be led to the retracted position guiding portion or the regular position guiding portion when the reciprocating member recedes from the advanced position.

20           19.    An electronic device according to Claim 16, wherein the movable member can be stopped at an arbitrary orientation outside the casing by stopping the motor driver in the middle of a reciprocating travel of the reciprocating member when the motor driver rotates in the first direction, or in the middle of a reciprocating travel of the reciprocating member when the motor driver rotates in the second direction.

25           20.    An electronic device according to Claim 16, wherein  
30               when one direction along an arbitrary lateral edge of a front panel of the casing is defined as a first side, and the other direction is defined

as a second side, the opening is provided at a position closer to the first side in the front panel;

the first support point is provided at the first side of the movable member, while the second support point is provided at a position closer to the second side away from the first support point;

the regular position guiding portion of the switching member is provided at the second side away from the retracted position guiding portion; and

an end portion of the movable member on the first side advances forward and an end portion thereof on the second side circularly moves toward the first side when the reciprocating member advances from the regular position, then the end portion on the second side enters the opening first when the movable member is set in the retracted position as the reciprocating member recedes.